

CLAIMS

1. An information-processing apparatus that transmits a carrier wave signal having a prescribed frequency to a signal-responding member of a back-scattering communication scheme and receives and processes a response signal obtained by modulating the carrier wave signal based on prescribed data from the signal-responding member, the apparatus comprising:

a signal-transmitting unit that transmits the carrier wave signal to the signal-responding member; and

a signal-processing unit that receives and processes the response signal scattered from the signal-responding member,

wherein the signal-processing unit is provided with a carrier-wave-compensating circuit, the carrier-wave-compensating circuit comparing a phase of the carrier wave signal in transmitting the carrier wave signal with a phase of the carrier wave signal in receiving the carrier wave signal and eliminating therefrom any carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal on the basis of a comparison result thereof.

2. The information-processing apparatus according to Claim 1, wherein the carrier-wave-compensating circuit includes:

a phase synchronization detection unit that compares a phase of the carrier wave signal in transmitting the carrier wave signal with a phase of the carrier wave signal in receiving the carrier wave signal and detects a carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal; and

an amplitude-controlling unit that eliminates therefrom the carrier wave signal, which is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal, detected in the phase synchronization detection unit.

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3. The information-processing apparatus according to Claim 2, wherein the amplitude-controlling unit includes:

an amplitude-adjusting circuit that adjusts amplitude of the carrier wave signal, which is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal, detected
10 in the phase synchronization detection unit; and

a calculation circuit that subtracts the carrier wave signal adjusted in its amplitude by the amplitude-adjusting circuit from the carrier wave signal in receiving the carrier wave signal.

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4. A wireless communication system that performs a wireless communication of prescribed data with a back-scattering communication scheme, the system comprising:

a signal-responding member that receives a carrier wave signal having a prescribed frequency and transmits a response signal obtained by modulating the carrier wave signal based on the prescribed data; and
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an information-processing apparatus having a wireless transmission and reception function, the information-processing apparatus transmitting the carrier wave signal to the signal-responding member and receiving and information-processing the response signal scattered from the signal-responding member,
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wherein the information-processing apparatus includes a carrier-wave-compensating circuit that compares a phase of the carrier wave signal in transmitting the carrier wave signal with a
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phase of the carrier wave signal in receiving the carrier wave signal and eliminates therefrom any carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal on the basis of a comparison result thereof.

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5. The wireless communication system according to Claim 4, wherein the carrier-wave-compensating circuit includes:

a phase synchronization detection unit that compares a phase of the carrier wave signal in transmitting the carrier wave signal with a phase of the carrier wave signal in receiving the carrier wave signal and detects a carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal; and

an amplitude-controlling unit that eliminates therefrom the carrier wave signal, which is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal, detected in the phase synchronization detection unit.

6. The wireless communication system according to Claim 5, wherein the amplitude-controlling unit includes:

an amplitude-adjusting circuit that adjusts amplitude of the carrier wave signal, which is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal, detected in the phase synchronization detection unit; and

a calculation circuit that subtracts the carrier wave signal adjusted in its amplitude by the amplitude-adjusting circuit from the carrier wave signal in receiving the carrier wave signal.

7. The wireless communication system according to Claim 4, wherein the signal-responding member is used with it being attached to a prescribed object to be specified.

5 8. The wireless communication system according to Claim 4, wherein the signal-responding member comprises:

an antenna body that receives the carrier wave signal;

a memory unit that stores the data;

an amplitude modulation unit that performs amplitude
10 modulation on the carrier wave signal based on the data read out of the memory unit; and

a power-supplying unit that supplies induced power to the memory unit and the amplitude modulation unit, the induced power being induced based on the carrier wave signal received by the antenna body.

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9. A wireless communication method of a back-scattering communication scheme comprising the steps of:

attaching to an object to be specified a signal-responding member that receives a carrier wave signal having a prescribed
20 frequency and transmits a response signal obtained by modulating the carrier wave signal based on the prescribed data;

transmitting the carrier wave signal to the signal-responding member attached to the object; and

receiving and signal-processing the response signal return
25 from the signal-responding member,

wherein a phase of the carrier wave signal in transmitting the carrier wave signal with a phase of the carrier wave signal in receiving the carrier wave signal are compared and a carrier wave signal that is not synchronized with the phase of the carrier wave

signal in transmitting the carrier wave signal is eliminated on the basis of a comparison result thereof.

10. The wireless communication method according to Claim
5 9, wherein a phase of the carrier wave signal in transmitting the carrier wave signal with a phase of the carrier wave signal in receiving the carrier wave signal are compared; a carrier wave signal that is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal; and the detected carrier
10 wave signal, which is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal is eliminated therefrom.

11. The wireless communication method according to Claim
15 10, wherein amplitude of the carrier wave signal, which is not synchronized with the phase of the carrier wave signal in transmitting the carrier wave signal is adjusted; and the carrier wave signal thus adjusted in its amplitude is subtracted from the carrier wave signal in receiving the carrier wave signal.